

1 CLAIMS - I claim

2 1. A semiconductor workpiece support for use in processing a
3 semiconductor workpiece, comprising:

4 a processing head mounted for controlled motion to allow the
5 processing head to be mated with a processing bowl to confine a
6 processing chamber therebetween;

7 a rotor mounted for controlled rotation upon the processing head,
8 said rotor having a front face which is exposed to the processing
9 chamber and a back face opposite to said front face;

10 a workpiece holder for holding the semiconductor workpiece in
11 juxtaposition to the front face of the rotor;

12 a beam emitter for emitting an emitted optical beam from a
13 location behind the back face of the rotor;

14 a beam detector for detecting any reflected optical beam which
15 results from said emitted optical beam if said emitted optical beam is
16 reflected from a workpiece held by the workpiece holder.

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18 2. The semiconductor workpiece support of claim 1 wherein
19 said detector can operate in a mode which discriminates on the angle
20 of any reflected optical beam.

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22 3. The semiconductor workpiece support of claim 1 wherein
23 said beam detector is defined to include at least a pair of detectors.
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1 4. The semiconductor workpiece support of claim 1 and further
2 comprising at least one window provided in the rotor to improve
3 transmission of the emitted or reflected beams.

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5 5. A semiconductor workpiece support for use in processing a
6 semiconductor workpiece, comprising:

7 a processing head;

8 a rotor mounted for controlled rotation upon the processing head,
9 said rotor having a front face which is exposed to a processing chamber
10 and a back face opposite to said front face;

11 a workpiece holder for holding the semiconductor workpiece in
12 juxtaposition to the front face of the rotor;

13 a beam emitter for emitting an emitted optical beam from a
14 location behind the back face of the rotor;

15 a beam detector for detecting any reflected optical beam which
16 results from said emitted optical beam if said emitted optical beam is
17 reflected from a workpiece held by the workpiece holder.

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19 6. The semiconductor workpiece support of claim 5 wherein
20 said detector can operate in a mode which discriminates on the angle
21 of any reflected optical beam.

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23 7. The semiconductor workpiece support of claim 5 wherein
24 said beam detector is defined to include at least a pair of detectors.

1 8. The semiconductor workpiece support of claim 5 and further
2 comprising at least one window provided in the rotor to improve
3 transmission of the emitted or reflected beams.

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5 9. A semiconductor workpiece support for use in processing a
6 semiconductor workpiece, comprising:

7 a processing head;

8 a workpiece holder for holding the semiconductor workpiece in
9 juxtaposition to a workpiece holder panel;

10 a beam emitter for emitting an emitted optical beam from a
11 location behind the workpiece holder panel, said emitted optical beam
12 passing through said workpiece holder panel;

13 a beam detector for detecting any reflected optical beam which
14 results from said emitted optical beam if said emitted optical beam is
15 reflected from a workpiece held by the workpiece holder.

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17 10. The semiconductor workpiece support of claim 9 wherein
18 said detector can operate in a mode which discriminates on the angle
19 of any reflected optical beam.

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21 11. The semiconductor workpiece support of claim 9 wherein
22 said beam detector is defined to include at least a pair of detectors.

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12. The semiconductor workpiece support of claim 9 and further comprising at least one window provided in the workpiece holder panel.

13. A method for detecting a semiconductor workpiece held by a workpiece holder forming part of a rotor which is rotatably mounted on a processing head mounted for controlled motion to allow the processing head to be mated with a processing bowl to confine a processing chamber therebetween, comprising:

positioning the rotor at a suitable location relative to a beam emitter and beam detector;

emitting an emitted optical beam from the beam emitter through a rotor panel and against any workpiece being held by the workpiece holder;

detecting to determine whether there is reflected optical beam which indicates that a workpiece is held in the workpiece holder.

14. A method according to claim 13 and further defined by emitting the emitted optical beam through a window forming part of the rotor.

15. A method according to claim 13 and further defined by discriminating in said detecting step to detect a reflected beam which is incident upon at least one detector at an angle associated with reflection from any workpiece present.

1 16. A method according to claim 13 and further defined by
2 discriminating in said detecting step to detect a reflected beam which
3 is incident upon at least one detector at an angle associated with
4 reflection from any workpiece present, and minimizing detection of any
5 beam reflected from surfaces of said rotor.

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